

ABSTRACT

Vertical and horizontal smear in images produced by a CCD imager can be compensated for by detecting the boundaries of the smear and substituting data from an alternative part of the image, or interpolated data within those boundaries. Vertical, or frame transfer, smear can also be compensated for by producing an error signal from charge accumulated during frame transfer and corresponding to one or more masked rows of the CCD imager. This error signal can be subtracted from the line signals corresponding to each row of the CCD images receiving radiation during image acquisitions. The CCD imager includes a multiplication register. The dynamic range of the imager may be extended by varying the gain of the multiplication register, for example on a line-by-line or frame-by-frame basis.